

AMENDMENTS TO THE CLAIMS

Please amend the claims as they currently stand so that they are in accord with the following listing of the claims:

1. (currently amended): A device for [[the]] electrostimulation of body tissue through a stimulation electrode, comprising:

[[an]] energy storage means for providing electrical stimulation energy to the stimulation electrode from an energy source;

a first switch with which the energy storage means is switchably connected to the energy source for charging the energy storage means;

an electrode connection for connecting the stimulation electrode to the device for delivering electrical stimulation pulses to the body tissue;

a ~~first~~ second switch with which the energy storage means is switchably connected to the electrode connection for the delivery of a stimulation pulse;

[[a]] means for monitoring stimulation outcome;

a short-circuit switch with which the electrode connection, after delivery of the stimulation pulse, is switchably and at least indirectly connected to a ground potential [[in]] such ~~a way that, in the case of a connected and implanted electrode line, a capacitance can be discharged by way of the body tissue and a ground electrode in such a way that a short-circuit current flows through the body tissue,~~ wherein the capacitance includes at least one Helmholtz capacitance ~~which is~~ produced on the surface of the stimulation electrode in conjunction with surrounding body fluid or the body tissue; and

a control unit which is connected to at least the first switch, the second switch, and the short-circuit switch for switching ~~over~~ the respective switches and which is adapted to separate the electrode ~~line~~ connection from the energy storage means ~~source~~ after delivery of the stimulation pulse and at least indirectly connect the electrode ~~line~~ connection to the ground potential;

wherein the means for monitoring stimulation outcome ~~monitoring means~~, at least after delivery of a stimulation pulse, is connected to the electrode connection and is adapted to detect

a drop in a voltage over time at the capacitance or a rise in a short-circuit current over time at the capacitance after delivery of the stimulation pulse, said drop in voltage or said rise in short-circuit current being representative of a characteristic drop in a myocardium impedance of said body tissue. configuration in respect of time of a voltage at the capacitance after delivery of the stimulation pulse or of the short-circuit current or a parameter linked to one of said parameters time course of a voltage and said time course of a short-circuit current.

2. (cancelled):

3. (currently amended): The device of claim [[2]]1, wherein:

the capacitance further comprises a coupling capacitor that is connected ~~into circuit when the short-circuit switch is closed~~ between the electrode connection (36) and the ground potential electrode when the short-circuit switch is closed.

4. (currently amended): The device of claim 3, wherein:

the coupling capacitor is arranged between the energy storage means and the electrode connection in such a way that the coupling capacitor is connected in series with the energy storage means when the first second switch is closed.

5. (currently amended): The device of claim 4, wherein:

the means for monitoring stimulation outcome ~~stimulation outcome monitoring means~~ is arranged and adapted to detect the voltage at the coupling capacitor.

6. (currently amended): The device of claim 5, wherein:

the means for monitoring stimulation outcome ~~stimulation outcome monitoring means~~ is connected so as to detect at least one of ~~[[the]]~~ a current strength of the short-circuit current over time or a level of the voltage over time at the capacitance at the electrode connection.

7. (currently amended): The device of claim 3, wherein:

the means for monitoring stimulation outcome ~~stimulation outcome monitoring means~~ is connected so as to detect at least one of ~~the~~ a current strength of the short-circuit current over time or a level of the voltage over time ~~at the capacitance between the coupling capacitor and the electrode connection.~~

8. (currently amended): The device of claim 7, wherein:

the means for monitoring stimulation outcome ~~stimulation outcome monitoring means~~ further comprises a differentiating member for differentiating the detected voltage level or the detected current strength.

9. (currently amended): The device of claim 8, wherein:

a threshold value detector is connected to the differentiating member in such a way that the means for monitoring stimulation outcome ~~stimulation outcome monitoring means~~ detects a drop in the detected voltage, which is above a predetermined limit value.

10. (currently amended): The device of claim 9, wherein:

a threshold value detector is connected to the differentiating member in such a way that the means for monitoring stimulation outcome ~~stimulation outcome monitoring means~~ ascertains when the derivative of the detected voltage is below a threshold value.

11. (currently amended): The device of claim 10, wherein:

a threshold value detector is connected to the differentiating member in such a way that the means for monitoring stimulation outcome ~~stimulation outcome monitoring means~~ detects when the derivative of the detected voltage, standardised to the detected voltage, is below a threshold value.

12. (currently amended): The device of claim 11, wherein:

a timer is connected to the means for monitoring stimulation outcome ~~stimulation outcome monitoring~~ means, the timer being started with the delivery of a stimulation pulse and which ascertains the time to the detection of a stimulation outcome.

13. (currently amended): The device of claim 12, wherein:

the timer outputs a time signal corresponding to the time duration between stimulation pulse output and occurrence of the stimulation outcome and is connected to the control unit which is responsive to the time signal and causes setting of ~~[[the]]~~a strength of the stimulation pulse in dependence on the time signal.

14. (currently amended): The device of claim 13, wherein:

the ground potential electrode is formed by a housing of the device or a surface portion thereof.

15. (original): The device of claim 14, wherein:

the energy storage means comprises at least one reservoir capacitor.

16. (currently amended): The device of claim 15, wherein:

the energy source includes ~~is provided with~~ a charge pump for charging the reservoir capacitor.

17. (currently amended): The device of claim 16, wherein:

said first switch switchably connects the energy source ~~includes switches which are so designed and connected to the capacitor that the~~ reservoir capacitor is connected for charging the reservoir capacitor ~~[[to]]~~ from the charge pump ~~and for the delivery of a stimulation pulse to the electrode connections.~~

18.-22. (cancelled):

23. (currently amended): The device of claim 1, wherein:

the means for monitoring stimulation outcome ~~stimulation outcome monitoring means~~ is connected so as to detect at least one of ~~[[the]]~~ ~~a~~ current strength of the short-circuit current over time or a level of the voltage over time at the capacitance at the electrode connection.

24.-27. (cancelled):

28. (currently amended): The device of claim 6, wherein:

the means for monitoring stimulation outcome ~~stimulation outcome monitoring means~~ is connected so as to detect at least one of ~~[[the]]~~ ~~a~~ current strength of the short-circuit current over time or a level of the voltage over time at the capacitance between the coupling capacitor and the electrode connection.

29. (cancelled):

30. (currently amended): The device of claim 28, wherein:

the means for monitoring stimulation outcome ~~stimulation outcome monitoring means~~ further comprises a differentiating member for differentiating the detected voltage level or the detected current strength.

31. (cancelled):

32. (currently amended): The device of claim 30, wherein:

a threshold value detector is connected to the differentiating member in such a way that the means for monitoring stimulation outcome ~~stimulation outcome monitoring means~~ detects a drop in the detected voltage, which is above a predetermined limit value.

33. (cancelled):

34. (currently amended): The device of claim 32, wherein:

a threshold value detector is connected to the differentiating member in such a way that the means for monitoring stimulation outcome ~~stimulation outcome monitoring means~~ ascertains when the derivative of the detected voltage is below a threshold value.

35. (currently amended): The device of claim 9, wherein:

a threshold value detector is connected to the differentiating member in such a way that the means for monitoring stimulation outcome ~~stimulation outcome monitoring means~~ detects when the derivative of the detected voltage, standardised to the detected voltage, is below a threshold value.

36.-37 (cancelled):

38. (currently amended): The device of claim 32, wherein:

a threshold value detector is connected to the differentiating member in such a way that the means for monitoring stimulation outcome ~~stimulation outcome monitoring means~~ detects when ~~when~~ ~~[[the]]~~ a derivative of the detected voltage, standardised to the detected voltage, is below a threshold value.

39. (currently amended): The device of claim 34, wherein:

a threshold value detector is connected to the differentiating member in such a way that the means for monitoring stimulation outcome ~~stimulation outcome monitoring means~~ detects when the derivative of the detected voltage, standardised to the detected voltage, is below a threshold value.

40. (currently amended): The device of claim 1, wherein:

a timer is connected to the means for monitoring stimulation outcome ~~stimulation outcome monitoring means~~, the timer being started with the delivery of a stimulation pulse and which ascertains the time to the detection of a stimulation outcome.

41. (cancelled):

42. (currently amended): The device of claim 39, wherein:

a timer is connected to the means for monitoring stimulation outcome ~~stimulation outcome monitoring means~~, the timer being started with the delivery of a stimulation pulse and which ascertains the time to the detection of a stimulation outcome.

43. (currently amended): The device of claim 40, wherein:

the timer outputs a time signal corresponding to the time duration between stimulation pulse output and occurrence of the stimulation outcome and is connected to the control unit which is responsive to the time signal and causes setting of ~~[[the]]~~ a strength of the stimulation pulse in dependence on the time signal.

44. (cancelled):

45. (currently amended): The device of claim 42, wherein:

the timer outputs a time signal corresponding to the time duration between stimulation pulse output and occurrence of the stimulation outcome and is connected to the control unit which is responsive to the time signal and causes setting of ~~[[the]]~~ a strength of the stimulation pulse in dependence on the time signal.

46. (currently amended): The device of claim 1, wherein:

the ground potential ~~electrode~~ is formed by a housing of the device or a surface portion thereof.

47. (currently amended): The device of claim 43, wherein:

the ground potential ~~electrode~~ is formed by a housing of the device or a surface portion thereof.

48. (cancelled):

49. (currently amended): The device of claim 45, wherein:

the ground potential electrode is formed by a housing of the device or a surface portion thereof.

50. (original): The device of claim 1, wherein:

the energy storage means comprises at least one reservoir capacitor.

51. (original): The device of claim 46, wherein:

the energy storage means comprises at least one reservoir capacitor.

52. (original): The device of claim 47, wherein:

the energy storage means comprises at least one reservoir capacitor.

53. (cancelled):

54. (original): The device of claim 49, wherein:

the energy storage means comprises at least one reservoir capacitor.

55. (currently amended): The device of claim 50, wherein:

the energy source includes ~~is provided with~~ a charge pump for charging the reservoir capacitor.

56. (currently amended): The device of claim 51, wherein:

the energy source includes ~~is provided with~~ a charge pump for charging the reservoir capacitor.

57. (currently amended): The device of claim 52, wherein:

the energy source includes ~~is provided with~~ a charge pump for charging the reservoir capacitor.

58. (cancelled):

59. (currently amended): The device of claim 54, wherein:

the energy source includes ~~is provided with~~ a charge pump for charging the reservoir capacitor.

60. (currently amended): The device of claim 55, wherein:

said first switch switchably connects the energy source ~~includes switches which are so designed and connected to the capacitor that the reservoir capacitor is connected for charging the reservoir capacitor~~ [[to]] from the charge pump ~~and for the delivery of a stimulation pulse to the electrode connections.~~

61. (currently amended): The device of claim 56, wherein:

said first switch switchably connects the energy source ~~includes switches which are so designed and connected to the capacitor that the reservoir capacitor is connected for charging the reservoir capacitor~~ [[to]] from the charge pump ~~and for the delivery of a stimulation pulse to the electrode connections.~~

62. (currently amended): The device of claim 57, wherein:

said first switch switchably connects the energy source ~~includes switches which are so designed and connected to the capacitor that the reservoir capacitor is connected for charging the reservoir capacitor~~ [[to]] from the charge pump ~~and for the delivery of a stimulation pulse to the electrode connections.~~

63. (cancelled):

64. (currently amended): The device of claim 59, wherein:

said first switch switchably connects the energy source ~~includes switches which are so~~
~~designed and connected to the capacitor that the~~ reservoir capacitor is connected for charging the
reservoir capacitor ~~[[to]]~~ from the charge pump ~~and for the delivery of a stimulation pulse to the~~
~~electrode connections.~~